Cover Letter

Mr. Pravin Patel
Rolls-Royce Allison
P.O. Box 420 (N-23)
Indianapolis, IN 46206-0420

Re: Significant Source Modification No:
097-11221-00311

Dear Mr. Patel:

Rolls-Royce Allison applied for a Part 70 operating permit on November 19, 1996 for Aerospace engine testing and manufacturing operation. An application to modify the source was received on July 27, 1999. Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

(a) One (1) engine test cell, identified as emission unit 00311-83. The engines tested in this test cell have a operating capacity of 10,000 pounds of thrust and are fired with Jet A fuel. A maximum of six engines per day can be tested in this test cell. Emissions from this test cell are exhausted out stack 5-83 and are not controlled. This emission unit was initially constructed prior to 1970 and is proposed to be modified to accommodate the testing of new type of engine.

The proposed Significant Source Modification approval will be incorporated into the pending Part 70 permit application pursuant to 326 IAC 2-7-10.5(l)(3). If there are no changes to the proposed construction of the emission units, the source may begin operating on the date that ERMD receives an affidavit of construction pursuant to 326 IAC 2-7-10.5(h). If there are any changes to the proposed construction the source can not operate until an Operation Permit Validation Letter is issued.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call 317-327-2234 and ask for Mr. Patrick Coughlin.

Sincerely,

Robert F. Holm Ph.D
ERMD Administrator
Attachments

cc: Files
U.S. EPA, Region V
ERMD Compliance Data -
Compliance Data Section - Jerri Curless
Administrative and Development - Janet Mobley
Technical Support and Modeling - Nancy Landau

2nd Revision to Proposed Permit

PART 70 SIGNIFICANT SOURCE MODIFICATION
OFFICE OF AIR MANAGEMENT
and
INDIANAPOLIS ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION

Rolls-Royce Allison
2355 South Tibbs Avenue
Indianapolis, Indiana 46206-0420

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15, IC 13-17 and the Code of Indianapolis and Marion County, Chapter 511.

Source Modification No.: T097-11221-00311	
Issued by: Robert F. Holm, PH.D, Administrator Indianapolis Environmental Resources Management Division	Issuance Date:

TABLE OF CONTENTS

SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) and ERMD. The information describing the emission units contained in conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates stationary source, used to manufacture aerospace engines.

Responsible Official:	S. M. Hudson
Source Address:	2355 South Tibbs Avenue, Indianapolis, Indiana 46241
Mailing Address:	P.O. Box 420 (N-23), Indianapolis, Indiana 46206-0420
Phone Number:	(317)-230-3591
SIC Code:	3724
County Location:	Marion
County Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD Rule; Major Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission units and pollution control devices:

(a) One (1) engine test cell, identified as emission unit 00311-83. The engines tested in this test cell have a operating capacity of 10,000 pounds of thrust and are fired with Jet A fuel. A maximum of six engines per day can be tested in this test cell. Emissions from this test cell are exhausted out stack 5-83 and are not controlled. This emission unit was initially constructed prior to 1970 and is proposed to be modified to accommodate the testing of new type of engine.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Permit No Defense [IC 13]

This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions [326 IAC 2-7-1]

Terms in this approval shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2 and 326 IAC 2-7 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.4 Revocation of Permits [326 IAC 2-1.1-9(5)][326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.5 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

(a) The attached affidavit of construction shall be submitted to the Indianapolis Environmental Resources Management Division (ERMD),Permits Section verifying that the emission units were constructed as proposed in the application. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to ERMD if constructed as proposed.

(b) If actual construction of the emissions units differs from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.

(c) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

(d) The Permittee shall receive an Operation Permit Validation Letter from ERMD, Permits Section and attach it to this document. However, in the event that the Title V application is being processed at the same time as this application, the following additional procedures shall be followed for obtaining the right to operate:

(1) If the Title V draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Title V draft.

(2) If the Title V permit has gone thru final EPA proposal and would be issued ahead of the Significant Source Modification, the Significant Source Modification will go thru a concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Title V permit at the time of issuance.

(3) If the Title V permit has not gone thru final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Title V permit, and the Title V permit will issued after EPA review.

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this approval or required by an applicable requirement, any application form, report, or compliance certification submitted under this approval shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, on the attached Certification Form, with each submittal.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this approval.

(b) Any application requesting an amendment or modification of this approval shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section, Permits
2700 South Belmont Avenue
Indianapolis, Indiana 46221

Any such application should be certified by the “responsible official” as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), visible emissions shall meet the following, unless otherwise stated in this approval:

(a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

C.4 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided in this approval, all air pollution control equipment listed in this approval and used to comply with an applicable requirement shall be operated at all times that the emission unit vented to the control equipment is in operation.

Testing Requirements [326 IAC 2-7-6(1)]

C.5 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAM.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

(b) All test reports must be received by IDEM, OAM and ERMD within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAM, and ERMD, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.6 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Compliance with applicable requirements shall be documented as required by this approval. All monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of approval issuance. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management

Compliance Branch, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.7 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-7-5][326 IAC 2-7-6] [326 IAC 1-6]

(a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:

(1) This condition;

(2) The Compliance Determination Requirements in Section D of this approval;

(3) The Compliance Monitoring Requirements in Section D of this approval;

(4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this approval; and

(5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this approval. CRP's shall be submitted to IDEM, OAM and ERMD upon request and shall be subject to review and approval by IDEM, OAM, and ERMD. The CRP shall be prepared within ninety (90) days after issuance of this approval by the Permittee and maintained on site, and is comprised of :

(A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this approval; and

(B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.

(b) For each compliance monitoring condition of this approval, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan,

shall constitute a violation of the approval unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.

(c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:

(1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the approval conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the approval, and such request has not been denied or;

(3) An automatic measurement was taken when the process was not operating; or

(4) The process has already returned to operating within "normal" parameters and no response steps are required.

(d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

C.8 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this approval exceed the level specified in any condition of this approval, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, and ERMD within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM and ERMD shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAM and ERMD within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM and ERMD reserves the authority to use enforcement activities to resolve noncompliant stack tests.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAM and ERMD that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate approval conditions may be grounds for immediate revocation of the approval to operate the affected facility.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.9 Monitoring Data Availability [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)]

(a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record

keeping, required as a condition of this approval shall be performed at all times the equipment is operating at normal representative conditions.

(b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this approval is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this approval.

(c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.

(d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.

(e) At its discretion, IDEM and ERMD may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

(f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.10 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

(a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAM, and ERMD representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner or ERMD makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner or ERMD within a reasonable time.

(b) Records of required monitoring information shall include, where applicable:

(1) The date, place, and time of sampling or measurements;

(2) The dates analyses were performed;

(3) The company or entity performing the analyses;

(4) The analytic techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions existing at the time of sampling or measurement.

(c) Support information shall include, where applicable:

(1) Copies of all reports required by this approval;

(2) All original strip chart recordings for continuous monitoring instrumentation;

(3) All calibration and maintenance records;

(4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this approval, and whether a deviation from an approval condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.

(d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of approval issuance.

C.11 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

(a) The reports required by conditions in Section D of this approval shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section, Data Compliance
2700 South Belmont Avenue
Indianapolis, Indiana 46221

(b) Unless otherwise specified in this approval, any notice, report, or other submission required by this approval shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, and ERMD on or before the date it is due.

(c) Unless otherwise specified in this approval, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(d) The first report shall cover the period commencing on the date of issuance of this approval and ending on the last day of the reporting period.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

(a) One (1) engine test cell, identified as emission unit 00311-83. The engines tested in this test cell have a operating capacity of 10,000 pounds of thrust and are fired with Jet A fuel. A maximum of six engines per day can be tested in this test cell. Emissions from this test cell are exhausted out stack 5-83 and are not controlled. This emission unit was initially constructed prior to 1970 and is proposed to be modified to accommodate the testing of new type of engine.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Matter (PM) [326 IAC 6-1-2]

Pursuant to 326 IAC 6-1-2(a)(Nonattainment Area Particulate Limitations), Particulate Matter (PM) emissions from Test Cell 00311-83 shall be limited to 0.03 grain per dry standard cubic foot. At the design flow rate of 346,400 standard cubic feet per minute this limitation is equivalent to 89 pounds per hour.

D.1.2 PSD Minor NOx Limit [326 IAC 2-2] [40 CFR 52.21]

The NO_x emissions from the Test Cell 00311-83 shall not exceed 0.1409 pounds per gallon or 62 pounds per hour and shall combust less than 567,779 gallons of Jet A fuel per twelve (12) consecutive month period. This fuel usage limitation is equivalent to 40 tons of NOx emissions per twelve (12) consecutive month period, rolled on a monthly basis. Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable.

D.1.3 Sulfur Dioxide (SO_2) [326 IAC 7-1.1-1]

Pursuant to 326 IAC 7-1.1 (SO_2 Emissions Limitations) the SO_2 emissions from Test Cell 00311-83 shall not exceed five tenths (0.5) pounds per MMBtu heat input.

Compliance Determination Requirements

D.1.4 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

The Permittee is not required to test this emission unit by this permit. However, IDEM and ERMD may require compliance testing when necessary to determine if the emission unit is in compliance. If testing is required by IDEM or ERMD, compliance with the PM or NOx limits specified in Conditions D.1.1 and D.1.2 respectively, shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.1.5 Fuel Usage Limitation

Compliance with Condition D.1.2 shall be demonstrated within 30 days of the end of each month based on the total amount of Jet A combusted in Test Cell 00311-83 for the most recent twelve (12) month period.

D.1.6 Sulfur Dioxide Emissions and Sulfur Content

Compliance shall be determined utilizing one of the following options.

(a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the fuel oil sulfur content does not exceed five-tenths percent (0.5%) by weight by:

(1) Providing vendor analysis of fuel delivered, if accompanied by a certification;

(2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.

(A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and

(B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or

(b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from Test Cell 00311-83, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to either of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

Compliance Monitoring Requirements

D.1.7 Visible Emissions Notations

(a) Visible emission notations of Test Cell 00311-83 stack exhaust shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

Recordkeeping and Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19

D.1.8 Record Keeping Requirements

(a) To document compliance with condition D.1.2, the Permittee shall maintain records of the amount of Jet A fuel combusted in Test Cell 00311-83 on a monthly basis.

(b) To document compliance with Condition D.1.3 and D.1.6, the Permittee shall maintain records in accordance with (1) through (6) below.

(1) Calendar dates covered in the compliance determination period;

(2) Actual fuel oil usage since last compliance determination period and equivalent sulfur dioxide emissions;

(3) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and

If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:

(4) Fuel supplier certifications;

(5) The name of the fuel supplier; and

(6) A statement from the fuel supplier that certifies the sulfur content of the fuel oil.

The Permittee shall retain records of all recording/monitoring data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

(c) To document compliance with Condition D.1.7, the Permittee shall maintain records of daily visible emission notations of the Test Cell 00311-83 stack exhaust.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.9 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.2, D.1.3 and D.1.6 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION
and
INDIANAPOLIS ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION
AIR QUALITY MANAGEMENT SECTION
DATA COMPLIANCE

PART 70 SOURCE MODIFICATION CERTIFICATION

Source Name: Rolls-Royce Allison
Source Address: 2355 South Tibbs Avenue, Indianapolis, Indiana 46241
Mailing Address: P.O. Box 420 (N-23), Indianapolis, Indiana 46206-0420
Significant Source Modification No.: T097-11221-00311

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

9 Test Result (specify) _____

9 Report (specify) _____

9 Notification (specify) _____

9 Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION
and
INDIANAPOLIS ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION
AIR QUALITY MANAGEMENT SECTION
DATA COMPLIANCE

Part 70 Quarterly Report

Source Name: Rolls-Royce Allison
Source Address: 2355 South Tibb Avenue, Indianapolis Indiana
Mailing Address: P.O. Box 420 (N-23), Indianapolis, Indiana 46206-0420
Part 70 Permit No.: T097-11221-00311
Facility: Test Cell 00311-83
Parameter: Jet A Fuel Usage
Limit: 567,779 gallons of Jet A fuel per 12 consecutive month period.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION
and
INDIANAPOLIS ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION
AIR QUALITY MANAGEMENT SECTION
DATA COMPLIANCE

Part 70 Quarterly Report

Source Name: Rolls-Royce Allison
Source Address: 2355 South Tibb Avenue, Indianapolis Indiana
Mailing Address: P.O. Box 420 (N-23), Indianapolis, Indiana 46206-0420
Part 70 Permit No.: T097-11221-00311
Facility: Test Cell 00311-83
Parameter: % Sulfur in Distillate Oil
Limit: 0.5% Sulfur

Months: _____ to _____ Year: _____

Dates fuel oil combusted	Sulfur content of fuel oil combusted was determined by supplier certification or sampling and analysis	Percent sulfur by weight of fuel oil combusted

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

INDIANAPOLIS ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION
AIR QUALITY MANAGEMENT SECTION, PERMITS

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____,I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____ .
(Company Name)

4. I hereby certify that , Rolls-Royce Allison has modified the following: test cell 00311-83 , identified as emission unit 0311-83.

   The test cell, identified as emission unit 0311-83 is in conformity with the requirements and intent of the construction permit application received by the Environmental Resources Management Division on July 27, 1999 and as permitted pursuant to **Permit No. T097-11221-00311, Plant ID No. 097-00311** issued on _____

5. Additional (?operations/facilities) were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit. (Delete this statement if it does not apply.)

6. I hereby certify that Rolls-Royce Allison is now subject to the Title V program and has submitted their Title V operating permit application, which includes the proposed equipment listed above.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

_____
Signature

_____
Date

STATE OF INDIANA)
)SS

COUNTY OF _____)
Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana on this _____ day of _____, 19 _____ . My Commission expires: _____

_____
Signature

_____
Name (typed or print)

Indiana Department of Environmental Management
Office of Air Management
and
Indianapolis Environmental Resources Management Division
Air Quality Management Section

Addendum to the
Technical Support Document for Significant Source Modification to a Part 70 Source

Source Name:	Rolls-Royce Allison
Source Location:	2355 South Tibbs Avenue, Indianapolis, Indiana
County:	Marion
SIC Code:	3724
Operation Permit No.:	T097-7238-00311
Operation Permit Issuance Date:	Pending
Significant Source Modification No.:	T097-11221-00311
Permit Reviewer:	Patrick Coughlin

On November 5, 1999 the Indianapolis Environmental Resource Management Division (ERMD) had a notice published in the Indianapolis Star, Indianapolis, Indiana, stating that Rolls-Royce Allison had applied for a Significant Source Modification to Part 70 source for a modification to engine test cell 00311-83. The notice also stated that ERMD proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On December 1, 1999, Rolls-Royce Allison submitted comments on the proposed Significant Modification to a Part 70 source. The summary of the comments is as follows:

Comment 1:

Condition A.2(a) and Section D.1 should be revised to allow for the combustion of any type of Jet Fuel. The description should be revised by replacing the word Jet A Fuel with Jet Fuel.

Response to Comment 1:

Condition A.2(a) is a description of the emission unit and is not enforceable part of the permit. For the purpose of clarification ERMD is proposing the following change to the facility description (revised language has been bolded):

(a) One (1) engine test cell, identified as emission unit 00311-83. The engines tested in this test cell have a operating capacity of 10,000 pounds of thrust and are fired with Jet ~~A~~ fuel. A maximum of six engines per day can be tested in this test cell. Emissions from this test cell are exhausted out stack 5-83 and are not controlled. This emission unit was initially constructed prior to 1970 and is proposed to be modified to accommodate the testing of new type of engine.

Comment 2:

Condition C.2 - There is no control device for this test cell. Therefore, a Preventative Maintenance Plan is not required. This item should be deleted.

Response to Comment 2:

OAM believes that most permits have a PMP required in at least one D section, therefore this condition will remain mandatory. In rare occasions where there is no PMP, the source may request that the condition be removed.

Condition C.2 was removed from the permit and all subsequent conditions in Section C were renumbered.

Comment 3:

Condition C.6 (Performance Testing) and C.9 (Actions Related to Noncompliance Demonstrated by a Stack Test) - The performance testing can not be completed using the suggested methods. Testing of these gas turbines are performed in accordance with FAA flight worthiness requirements. IDEM and ERMD should use the data collected for FAA certification testing described in 40 CFR Part 87 and FAR 34. This item should be deleted or revised in the permit.

Response to Comment 3:

Conditions C.6 (renumber condition C.5) and C.9 (renumbered condition C.8) do not specifically require the testing unless testing is being required in section D of the permit. Since testing is not being required in section D, performance testing of Test Cell 00311-0083 is not being required by this permit. ERMD and IDEM reserve the right to require a performance test if determined necessary to demonstrate compliance. If required Rolls-Royce Allison seek approval from IDEM of an alternative testing method.

The permit was not changed as a result of this comment.

Comment 4:

Condition D.1.2 - The emissions from these engines are based on the amount of thrust applied and not a fuel usage rate. The NOx limit should be 62 pounds per hour, in this regard, 0.1409 pounds per gallon should be deleted.

Response to Comment 4:

In order to make the PSD minor source limit enforceable ERMD needs to relate the gallons per twelve consecutive month period limitation to a short term limit.

The permit was not changed as a result of this comment.

Comment 5:

Conditions D.1.5, D.1.8(a) and the Quarterly Report Form should be revised to read Jet fuel and not Jet A fuel.

Response to Comment 5:

Conditions D.1.5, D.1.8(a) and the quarterly report form have been changed as requested.

Comment 6:

Condition D.1.7 - The visible emissions notations of this test cell can not be performed by the operator because this particular test cell does not have a stack which can be viewed from the engine control room. Visible emission would be abnormal only if oil were to leak into the engine. We recommend that the language regarding emission monitoring be revised to read, “operator should monitor the oil consumption of the engine per production test specifications”. Please revise this section as required.

Response to Comment 6:

ERMD believes that monitoring of the oil consumption during each test cycle provides for more adequate assurance of compliance with the PM emission limitation and is therefore deleting the daily visible emissions observation requirement in condition D.1.7 and replacing it with the following condition:

Old Condition:

~~D.1.7 Visible Emissions Notations~~

~~(a) Visible emission notations of Test Cell 00311-83 stack exhaust shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.~~

~~(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.~~

~~(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.~~

~~(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.~~

~~(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.~~

New Condition:

D.1.7 **Parameter Monitoring**

The Permittee shall monitor the oil consumption once per engine test cycle. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the oil consumption per test shall be maintained within a range established in the production test specification. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the oil consumption exceeds the threshold established in the production test specification for any one reading.

As a result of this change the record keeping requirement in condition D.1.8(c) was revised as follows to reflect the new compliance monitoring requirement:

(c) To document compliance with Condition D.1.7, the Permittee shall ~~maintain~~ record~~s~~ **whether the oil consumption rate is within the performance test specifications once per test cycle and shall keep records of the performance test specification for each type of engine or type of test performed in Test Cell 00311-83** ~~of daily visible emission notations of the Test Cell 00311-83 stack exhaust~~.

Indiana Department of Environmental Management
Office of Air Management
and
Indianapolis Environmental Resources Management Division
Air Quality Management Section

Technical Support Document (TSD) for a Source Modification to a Part 70 Operating Permit

Source Background and Description

Source Name:	Rolls-Royce Allison
Source Location:	2355 South Tibbs Avenue, Indianapolis, Indiana
County:	Marion
SIC Code:	3724
Operation Permit No.:	T097-7238-00311
Operation Permit Issuance Date:	Pending
Significant Source Modification No.:	T097-11221-00311
Permit Reviewer:	Patrick Coughlin

The Office of Air Management (OAM) and Indianapolis Environmental Resources Management Division (ERMD) has reviewed a modification application from Rolls-Royce Allison relating to the construction of the following emission units and pollution control devices:

(a) One (1) engine test cell, identified as emission unit 00311-83. The engines tested in this test cell have a operating capacity of 10,000 pounds of thrust and are fired with Jet A fuel. A maximum of six engines per day can be tested in this test cell. Emissions from this test cell are exhausted out stack 5-83 and are not controlled. This emission unit was initially constructed prior to 1970 and is proposed to be modified to accommodate the testing of new type of engine.

The Office of Air Management (OAM) and Indianapolis Environmental Resources Management Division have reviewed a modification application from Rolls-Royce Allison relating to the modification to test cell 00311-83.

History

On July 27, 1999, Rolls-Royce Allison submitted an application to the ERMD and OAM requesting to a modification to test cell 00311-83. Rolls-Royce Allison has submitted a Part 70 application on November 19,1996.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (inches)	Flow Rate (acfm)	Temperature (^{0}F)
No Stack	00311-83	40	240 X 240	400,000	160

Recommendation

The staff recommends to the Commissioner that the Significant Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on July 27, 1999. Additional information was received on October 20, 1999.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (Page 1 of 1 in Appendix A)

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential Emissions (tons/year)
PM	15
PM-10	14
SO_2	49
VOC	20
CO	204
NO_x	272

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

HAP's	Potential Emissions (tons/year)
Individual HAP	Less than 10
Combination of HAPs	Less than 25

Justification for Modification

The Part 70 Operating permit is being modified through a Part 70 Significant Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5(f)(4).

County Attainment Status

The source is located in Marion County.

Pollutant	Status
PM-10	Attainment
SO_2	Attainment
NO_2	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC and NO_X emissions are considered when

evaluating the rule applicability relating to the ozone standards. Marion County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Marion County has been classified as attainment or unclassifiable for PM-10, SO_2, NO_2, CO and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	greater than 250
PM-10	greater than 250
SO_2	greater than 250
VOC	greater than 250
CO	greater than 250
NOx	greater than 250

(a) This existing source is a major stationary source because an attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the 28 listed source categories.

(b) These emissions are based upon draft Part 70 Technical Support Document.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
Average actual emissions for two (2) years period (1998-1997) Test Cell 00311-83	0	0	0	0	0	0	0
Increase in Limited PTE as a result of the proposed modification. Test Cell 00311-83 (1)	2	2	7	3	30	<40	Negligible

Total Limited PTE for Test Cell 00311-83	2	2	7	3	30	<40	Negligible
PSD Significance Thresholds	25	15	40	40	100	40	NA

(1) The limited PTE is based on limiting the usage of Jet A fuel to 567,779 gallons per twelve consecutive month period. The limited PTE for PM, PM-10, SO_2, CO, and VOC are based on AP-42 emissions factors and limited fuel usage. The Limited PTE for NOx is based on a short term emissions rate of 140.9 pounds per 1000 gallons of Jet A fired and limited fuel usage.

This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) There are no National Emissions Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 20 and 40 CFR Part 63 or 61) applicable to this source.

(c) The engines produced by Rolls-Royce Allison are subject to the requirements of 40 CFR Part 87 Control of Air Pollution from Aircraft and Air Craft Engines. Pursuant to 40 CFR Part 87 Rolls-Royce Allison is required to perform emissions testing for FAA certification.

State Rule Applicability - Individual Facilities

326 IAC 1-6-3 (Preventive Maintenance Plan)

According to a IDEM, OAM guidance document Preventative Maintenance Plans (PMP) are required for all emitting units which emit PM, SO_2 or VOC with existing applicable requirements and:

1) a NSPS or NESHAP applies; or
2) the unit has a control device and allowable emissions exceed 10 pounds per hour; or
3) the unit does not have a control and actual emissions exceed 25 tons per year; or
4) the unit would have been subject to an applicable requirement if there was not a condition limiting the PTE.

Due to the fact that the emissions generating unit (engines being tested) are constantly being changed on ERMD is not requiring a PMP for this engine test cell 00311-83.

326 IAC 2-2 (Prevention of Significant Deterioration)

Rolls-Royce Allison is a major PSD source since it is not included on the list of 28 source categories and has the potential to emit of a criteria air pollutant greater than 250 tons per year. The potential increase in the emissions of NOx from the proposed modification to this test cell are greater than the PSD significance thresholds for NOx emissions, therefore the potential to emit NOx emissions from this test cell were limited to less than 40 tons per year over the two years average actual NOx emissions from this unit such that the PSD Regulation 326 IAC 2-2 and 40 CFR Part 52.21 will not apply. Since this test cell has not been used for the past 5 years the actual emissions from this unit were zero tons per year, therefore the PTE of NOx was limited to less than 40 tons per year such that the PSD regulation will not apply. The Permittee is limited to an NOx emission rate of 0.1409 pounds per gallon or 62 pounds per hour and shall combust no more than 567,779 gallons of Jet A fuel per twelve consecutive month period. This fuel usage limitation is equivalent to less than 40 tons of NOx per twelve consecutive month period and has been calculated as follows:

$$\frac{\left(\frac{40\ tons}{yr}\ x\ \frac{2000\ lbs}{ton}\right)}{0.1409\ \frac{lbs}{gal}}\ '\ 567{,}779\ \frac{gal}{yr}$$

326 IAC 2-4.1 (New Source Air Toxic Controls)

The requirements of 326 IAC 2-4 do not apply, since the Permittee is not constructing or reconstructing a major source of hazardous air pollutants (HAPs).

326 IAC 6-1.1 (Nonattainment Area Limitations)

Since this source has the PTE for Particulate Matter emissions greater than 100 tons per year, and/or actual emissions greater than 10 tons per year and is located in Marion County the Nonattainment Area Limitations established 326 IAC 6-1.1-2 apply. Since this emitting unit is not limited by any of the provisions under 326 IAC 6-1.1-2 (b) through (g), the general emissions limitation established in 326 IAC 6-1.1-2(a) applies. Pursuant to 326 IAC 6-1.1-2(a) the PM emissions shall not exceed 0.03 grains per dry standard cubic foot of exhaust gas. Based on the calculations provided on page 1 of Appendix A, the PM emission unit appears to be in compliance with 326 IAC 6-1.1-2(a).

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 7-1.1 (Sulfur Dioxide Emissions)

Since the limited PTE for SO_2 is greater than 10 pounds per hour the sulfur dioxide emissions are limited 0.5 pounds per million Btu or a sulfur content of the fuel of 0.5% by weight. Based on available date the sulfur content of Jet A fuel is less the 0.5% by weight, therefore this unit appears to be in compliance with 326 IAC 7-1.1-2.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will

arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

1. The test Cell 00311-83 has applicable compliance monitoring conditions as specified below:

   (a) Visible emissions notations shall be performed once per day of the Test Cell 00311-83 stack exhaust during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

   (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

   (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

   (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

   (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

This monitoring condition is necessary because to ensure continuous compliance with 326 IAC 6-1.1-2(a).

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Part 70 Application Form GSD-08.

(a) This source will emit levels of air toxics greater than those that constitute major source applicability according to Section 112 of the 1990 Clean Air Act Amendments.

Conclusion

The operation of this Test Cell 00311-83 shall be subject to the conditions of the attached proposed source modification approval T097-11221-00311.

Appendix A
Emission Calculations

Appendix A
Emissions Calculation

Emissions Unit	00311-83	
Heat input capacity of engine	55	MMBtu/hr
Operating Capacity	1000	lbs of Thrust
Maximun firing rate of engine	440	gal/hr
Max. number of engine tested/day	6	
Type of Fuel	Jet A	
Heat Capacity of Fuel	125000	Btu/gal
Sulfur Content of fuel	0.2	precent by weight
Potential fuel usage	23126400	gal/yr
Stack ID	5-83	
Stack Temp	71	C
Stack flowrate (acfm)	400,000	
Stack flowrate (scfm)	346,400	

Potential Emissions

Pollutant	PM (Filterable)	PM-10 (Total)	SO2	NOx	CO	VOC
Emission Factor (AP-42 Table 3.4-1)	0.062	0.0573	0.202	140.9	0.85	0.0819
Source of emissions factor	AP-42 (Table 3.4-2)	AP-42 (Table 3.4-2)	AP-42 (Table 3.4-1)	Source Data	AP-42 (Table 3.4-1)	AP-42 (Table 3.4-1)
Unit of emission factor	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/1000 gal	lbs/MMBtu	lbs/MMBtu
Pounds per hour	3.41	3.15	11.11	62.00	46.75	4.50
Pounds per day	81.84	75.64	266.64	1487.90	1122.00	108.11
Tons per year	14.94	13.80	48.66	271.54	204.77	19.73

The NOx emission factor is based on emissions testing conducted pursuant to 40 CFR Part 87, required to get FAA certification.

Applicable Regulation

Emission Unit	Pollutant	Regulation	Short Term Limit	Long Term Limit
Test Cell 00311-83	PM	326 IAC 6-1.1-2(a)	0.03 gr/dscf	
Test Cell 00311-83	NOx	326 IAC 2-2 (Minor Source Limit)	1.1272 lbs/MMBtu or 62 lbs/hr	567,779 gal/12 month period
Test Cell 00311-83	SO2	326 IAC 7-1.1	0.5 lbs/MMBtu or 0.5% sulfur by weight	

Fuel Usage Limitation taken to limit NOx emissions to less than 40 tons per year such that the PSD regulation shall not apply.

(40 tons/yr x 2000 lbs/ton)/(0.1409 lbs/gal) = 567,779 gals/12 month period

Limited Potential to Emit

Emission Unit	PM(1)	PM-10(1)	SO2(1)	NOx	CO(1)	VOC(1)
Test Cell 00311-83	2	2	7	40	30	3

(1) The PTE for PM, PM10, SO2, CO and VOC in tons per year are not limits in this permit, the values specified above reflect the potential emissions at 567,779 gallons of fuel combusted per year.

Compliance Determination

This unit appears to be in compliance with 326 IAC 6-1.1-2(a) based on the following calculations:

Actual Emissions	0.062 lbs/MMBtu x 55 MMBtu/hr =	3 lbs/hr
Equivalent Short Term Allowable	0.03 gr/dscf x 346,400 scfm x 60 min/hr / 7,000 gr/cf =	89 lbs/hr